

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Region III - 6th & Walnut Sts

Philadelphia, Pa 19106

ORIGINAL
(Red)

SUBJECT: Groundwater sampling, ARMY CREEK SITE

DATE: 2 Oct 84

FROM: Bruce Molholt, Ph.D. (3HW14)
Toxicologist, CERCLA Enforcement

TO: Rich Zambito (3HW22)
CERCLA Response Section

Amick

This memorandum concerns the validity of well sampling data from 1983 considering ample contamination of the laboratory blank with organic compounds in excess of 1 ppm total.

Although it is unfortunate that the laboratory blank was so heavily contaminated, and that some of these contaminants (e.g., diethyl and dibutyl phthalates) appear in similar concentrations throughout well samplings, no heavy metals contaminated the laboratory blank. It is the heavy metal contaminants which I believe to be the most toxic components of groundwater contamination at the Army Creek Site.

Chromium, cadmium, arsenic, nickel and selenium contaminate groundwater in excess of EPA recommended standards. The sampling data are summarized below:

TOXIC INORGANIC CONTAMINANTS AT ARMY CREEK SITE

(all values in ppb)

<u>Sampling wells</u>	<u>Metal</u>	<u>Concentration</u>	<u>AWC*</u>	<u>Conc./AWC</u>
6, 8	chromium	80	.0008**	100,000
3	cadmium	20	10	2
2, 14	arsenic	20	.002	10,000
1, 2, 5, 9, 16	nickel	200	133	2
6, 8, 2	selenium	26-200	10	2.6-20

*Ambient water quality criterion (10^{-6} cancer fatalities per lifetime)

**For hexavalent chromium

Obviously, from the results above, chromium and arsenic are the most toxic contaminants in groundwater at the Army Creek Site, and could, if consumed for a lifetime at these concentrations, cause cancer fatalities in over 10 percent of those consuming contaminated groundwater.

The validity of these results is not altered by blank contamination.

AR301083